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THE STATUS OF THE CATEGORIES.

THE nature of the categories has been much obscured in the past by the efforts of Kant to meet Hume's sensationalism. Both Kant and Hume were geniuses of the first water and did in the way of analysis all, and more than all, that could rightly be expected of them by their most fervent admirers; and yet they could not accomplish the impossible.

I am compelled to criticize the tendency of this eighteenth-century movement as in many ways perverse. The story is an old one, and I shall refer only to essential points. Hume reduced reality to a manifold of passing elements which had no permanence or sameness. *In other words, he clearly saw that data are not physical things*, and yet he was so much influenced by Berkeley's idealism that he was unable to work out a theory of knowledge of a realistic sort. To a Humean, we can only offer our own critical theory of knowledge, which is neither naive realism nor a copy-theory. I presume that Hume would have admitted our possession of such categories as identity and permanence but would have denied their applicability to anything in human experience. The assumption that there was anything validly to apply them to was an illusion. But the critical realist would retort that we rightly apply them to objects of perception which we affirm, not to the contents of perception, Hume's impressions.

Kant started from the fact of knowledge and proceeded

to analyze the contents and implications of scientific knowledge. This was an excellent method of approach to the problem; but, unfortunately, Kant had not achieved an adequate epistemology and so was led to distinguish between phenomena present to, and formed by, a universal, logical mind and the inner flow of sensations in an individual mind. This logical mind supposedly forms its objects, and so knowledge finds what mind has already contributed. As is well known, Kant postulated an original manifold of sensations somehow passively given to the mind. The logical mind was thereupon regarded as a machine which actively wove these sensations into an ordered pattern. The pattern was contributed by the mind and was mental.

Kant's phenomena are really contents and not objects. Although he is an empirical realist, he is not a physical realist. Or, to put it otherwise, these phenomenal contents which he takes to be objects are constructs related to the postulated synthetic ego and dependent on it. Kant is an idealistic naive realist, that is, he does not want to drop back into psychologism with Hume, and yet he is convinced that what is given is mental. To put it frankly, he was puzzled. No one can read the *Critique of Pure Reason* without feeling that. He tries to keep the realism as against the percipient, while admitting the idealism in relation to a logical ego. It is this "objective" idealism which modern idealism takes refuge in. Unlike Hume's sensations, the Kantian phenomenon is thought of as permanent and identical. It is in this similar to the *thing* of naive realism, and yet it differs in that it is relative to a logical ego.

In accord with most critical thinkers to-day, I would disavow both Hume's atomism and Kant's logical machinery. As James Ward puts it, "Thinking is doing, and like all doing has a motive and has an end. Kant's *logical ego* functioning spontaneously out of time is but a chimera

buzzing in a vacuum and feeding on second intentions; that it is the thinnest of abstractions, he himself allows."¹

What we must commence with is the field of the individual's experience as it is concretely given with its structure and empirical content full upon it. Genetic logic and genetic psychology can study the growth of this complex experience from humbler stages, but they find no reason to assume either a disconnected manifold or a spider-like ego, however far back they go. What they will discover is greater simplicity of structure and fewer distinctions.

Strictly speaking, epistemology is a critical science which studies the meaning and claim of knowledge at the level of adult experience in the light of what are decided to be inevitable and well-grounded distinctions. Hence, this genetic approach is not absolutely necessary to it. Yet it is confirmatory and suggestive, and enables the thinker to throw off the incubus of the old controversies. *I would not be understood to belittle the value of a keen insight into the logical development of modern philosophy.* I do not believe that any one can go far toward the solution of these problems unless he appreciates the formulations, rejections, successes, and failures of past thinkers. He must have the ability to hold past and present together in a synoptic way, and yet possess the vitality that is not overwhelmed by erudition. In other words, he must be able to put his finger upon the genuine problems and grasp the best setting for them that philosophy and science have made possible by their growth.

The individual's field of experience is, I take it, but another name for what the psychologist calls consciousness. The common thesis of critical realist and psychologist is that this changing field of experience is a structural whole which is a function of the organic individual in active rela-

¹ Ward, *Naturalism and Agnosticism*, 4th ed., p. 481. I am glad that I can agree so largely with Ward on these points.

tion with his environment which consists of inorganic things and other persons. It is *within* this organic individual as an expressive part of it that consciousness arises. Personally, I do not care whether this organic individual be called a subject, or a self, or what it is called, so long as no unempirical notions are surreptitiously introduced. I prefer to call it an organic individual or a psycho-physical organism because these terms correspond to our knowledge of it and do not preclude the intussusception of all that the terms subject or self can justly add. Let me admit that idealistic philosophy was far from wrong in its protests against associational psychology and against the *reductive* mechanistic views of biology. *It was right in its empiricism; it was wrong in its transcendentalism.* But is not this old battle a thing of the past whose fruits have been appropriated by the younger generation? The sharp contrasts of the past have given way to a deeper outlook. The time is ripe for the interpretation of this massive growth. It is my contention that evolutionary naturalism, on the metaphysical side, and critical realism, on the epistemological side, are the logical philosophical formulations of the actual *Weltanschauung* of the present.

Epistemology stresses what psychology has neglected, viz., the structural or formal side of consciousness. I presume that it puts its finger on a common weakness of past science, its neglect of pattern or organization. Psychology has been largely reductive and analytic. It may be that psychology can thus best meet the special problems in which it is interested. Nevertheless, philosophy must examine the structure and important distinctions of the individual's field of experience. These are facts as real as any to be found in biology. This descriptive empiricism, dealing with the structure of the whole of consciousness as it is concretely given rather than with the hypothetical elements into which *abstracted parts* like ideas and perceptual com-

plexes can be analyzed, is the true foundation of epistemology.² Such descriptive empiricism has nothing in common with what continental thinkers call psychologism. It does what psychology has neglected to do; it enlarges psychology, if you will. And I take it that this is what modern philosophy has really accomplished. Unfortunately, the Kantian tradition with its consciousness-in-general and its neglect of the individual was often too strong for it.

This large structure of concrete consciousness is just as common to various individuals as is the structure which the biologist finds in an animal species. This commonness of structure, however, no more conflicts with mental pluralism than does the common structure of individuals of a species conflict with the numerical distinctness of the individual organisms.

Now with the addition of this descriptive enlargement of psychology, critical realism reaffirms the belief of both common sense and psychology that consciousness is a function of the organic individual in interaction with its environment. But against naive realism it holds that this environment is not apprehended. The knowledge situation is more complex than naive realism supposes. New distinctions must be added. In other words, knowledge is not conceived *as an act of awareness* of an object literally presented but *as a structural system of contents and affirmations*. Knowledge of physical existents can be only grounded information assigned to affirmed objects as revealing something about them.³

If the individual's field of experience is a growth which reflects—if it does not do more—the active interplay of organism and environment, we need not be surprised to find that it contains distinctions of significance. Let us

² Cf. *The Essentials of Philosophy*, Ch. 8.

³ Cf. an article in the *Philosophical Review*, September, 1918. This interpretation of knowledge does not conflict with the existence of less critical views.

mention a few such distinctions which we shall later analyze.

There is, for instance, the idea of particular physical things. These things are qualified as permanent and self-identical. These are the categories which we saw puzzled Hume who could not find anything which justified their application. We know that they apply to existences which cannot be literally given but which are represented in a way by data. The origin of these categories is fairly clear to the psychologist of to-day. They are quite obviously not contributions of a logical ego but meanings which reflect concrete experiences. The individual senses his own permanence and recognizes the same content again and again which he instinctively treats as the object to which he is reacting. Thus the sensible things of naive realism are complexes of contents which move together and behave in describable ways. Their self-existence is partly modeled on that of the self and their independence means that they are things to be reckoned with. Thus these preliminary categories grow up in a natural and empirical way.

These things are perceived as in spatial relations with one another; they "act" upon one another; they change in various ways. The bodily self reacting to them is considered one of them, and its experiences of willed action and passive influence are the material for much of the first idea of these categories. It is only later that such categories are critically examined and adjusted to what is actually known about physical existents. Probably the critical refinement of the category of causality illustrates the status of the categories as well as any. Much of the feeling content has had to be elided.

How natural these distinctions built around "things" sound! How inevitable they seem to us to be! And yet they are growths whose psychological basis and stages we can in a measure trace. They are expressions of the inter-

pretative drift of consciousness under the play of organic instincts and external stimuli. The presentational content—itsself a growth of sensori-motor processes—is seized, as it were, by interests focalized in the self. This presented field suggests a division into complexes which hold together, move together, and threaten or entice the self. Thus are empirical things differentiated and interrelated.

Within the field of the given, therefore, the growth of a clear pattern appears to be the function of a process in which two complementary factors work: change of position of complexes on their own initiative, and the attention to these complexes in a unitary way as a result of interests such as desire, curiosity, and fear. Because these complexes are not under the individual's direct control, they are regarded as external things and secure motor meanings. They are co-real with the self; things to be reckoned with; objects which have consequences for weal and woe. Thus this empirical structure of consciousness has an origin of the most natural sort. It rests, on the one side, upon characteristics of presentational complexes, their groupings and changes, their independence of direct control; on the other side, upon selective interests of the self.

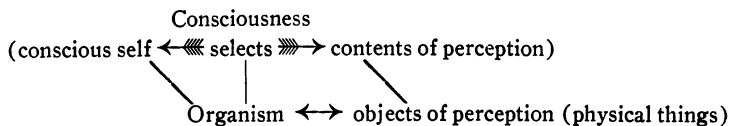
Philosophy has laid great stress upon this distinction between the self and the not-self. Yet it has failed to give it the concrete setting which is desirable.⁴ It must be remembered that the not-self is a term for a plurality of things not felt to be essentially different in kind from the self. The contrast held in mind is self as a conscious center of action; and this self is from the first a bodily self. What we should stress is the fact that we have here

⁴ Cf. Ward's quotation from Ferrier, *Naturalism and Agnosticism*, pp. 491-2. Ward tries to kill dualism in this fashion. But this pattern within the individual's consciousness has nothing to do with dualism; *it has to do with the indication of pluralism*. Each self feels itself confronted with many co-real things. I am inclined to think that the inability to distinguish between content and object of perception together with that abstraction, consciousness-in-general, account for much idealism.

a pattern within the consciousness of each individual. The self notes factors in their relation within consciousness and so achieves the category of thinghood. It notes sequential changes in one complex after another has moved toward it and come in "contact" with it, and soon arrives at the idea of causal interaction. The setting of these primary or common-sense categories is very concrete. The active self selects and seeks to control; it notices alterations of position; it remarks changes. It is one thing among others intensely interested in them and their possibilities.

Of course, the development of these primary categories takes time. They are growths; and yet, I think, inevitable growths. It is absurd to attempt to deduce them from an abstract understanding. They are products of the character and behavior of the sense-continuum in relation to the self as active and interpretative. Spatial and temporal order are features of the complexes which are given thinghood; and causality is the spatio-temporal interaction of these things. The framework is objective, and, if the self introjectively gives a tang and affective atmosphere to it, this subjective coloring can be withdrawn without injury to what is cognitively essential. The conscious self does not spin the categories from itself.

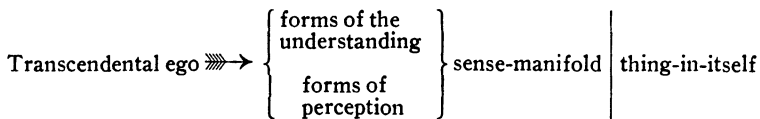
But it is time that we gave this development within experience its realistic setting. The parallelism between the object of perception and the interested organism, on the one hand, and the content of perception and the conscious self, on the other hand, needs to be borne in mind. The following diagram may suggest the situation:



The foundation of the growth of the field of experience is the interaction of organism and environment. This situa-

tion is symbolized in the diagram by the double-headed arrow. Corresponding to this active relationship, and expressive of it, is the structure of consciousness indicated above the organism. While the relation between the organism and its environment is causal, the relation between the conscious self and the contents of perception is not overtly causal in the same sense. Yet it is an undoubted fact that the conscious self is influenced by the contents of perception and that the contents of perception are selected more or less in accordance with the interests of the conscious self. Overt changes in the content of perception (an empirical thing) can be brought about only by action of the organism. This diagram illustrates the control of the contents of perception by the objects of perception. It also makes clear the basis for the conformity of data and objects. It is just because objects are organized wholes which move as one that contents of perception behave in a corresponding way in consciousness. It is just because the relations of objects are spatial and temporal that the relations of content-complexes are likewise spatial and temporal. The whole situation suggests that controlled *correspondence of order* which critical realism affirms.

Let us now contrast this analysis with Kant's schema. As nearly as I can make out the main drift of Kant's outlook—every one acknowledges that he hesitated—it is as follows:



Now it is evident that there can be no correspondence of order between the thing-in-itself and the *objects of experience* whose order is subjectively assigned. Kant shut himself into agnosticism by his very approach. Kant's schema follows the working of a machine into which raw

material is fed and there worked up. But is not the analogy completely false? We have to do with an organism *with remarkable capacities* under complex stimulation.

The need of the organism is to achieve a presentational pattern corresponding to the physical environment to which it must adapt itself. I do not think that it is far-fetched to suggest that consciousness is an instrument of that adaptiveness or *Zweckmässigkeit* which characterizes all organic life. The facts indicate that the organism selectively receives stimuli in their real order and transmutes them into sense-data of a corresponding order. Association by contiguity assists the construction of this internal pattern, but the method is not entirely passive. Recognition of the same objects of perception enables the organism to test its constructions again and again. There is nothing of the pure machine in all this. It is more like the fulfilment of a set task. It is the effort of the organism for its own safety to shut out the arbitrary and purely subjective. As I put it in an article, "The brain is sympathetic with reality and, like a skilled lawyer, draws out its story and puts it into its own language."⁶ It is the actual situation of the organic individual which leads to the conformity of the pattern of empirical contents with physical things. It is the need of the organism which makes it objective in its methods.

The higher levels in consciousness bear witness to the same aim. The conscious self identifies, discriminates, analyzes, compares, notes implications, traces relations, etc. What it does is to bring out the pattern in all its complexity. It does not change its material, it studies it; and it finds assistance in repetition, experimentation, a larger experience. *The activities of the mind are like ingenious tools, they further the aim of the organism.* Not by passivity but by the right sort of activity is the correct pattern

⁶ *The Philosophical Review*, September, 1918.

reached. Realizing this, we stand on the shoulders of Hume and Kant. We have risen above the yearning for a passive transmission of the world into consciousness. But in so doing we have risen above both naive realism and the copy-theory. We can be realists and yet appreciate what idealism felt to be a truth, the part played by mind in knowledge.

Yet this mind is not a disembodied mind. It is not a logical ego nor a transcendental self. It is the mind of psychology and logic; it is the brain-mind sensitive to stimuli and transmuting them into presentations which arouse in the same brain-mind interests, focused in the conscious self, and operations of both an analytic and a synthetic character. This brain-mind is an instrument of the organism and it employs consciousness as a medium and means for the transmutation of the macrocosm into a correspondent microcosm. And this cognitive side of the mind is, as we all realize to-day, an organon of the affective-volitional tendencies of the organic individual. But we must not forget that what is at first almost entirely a means can become an end desired for its own sake. The desire to know is now a prime desire of civilized man.

Knowledge is, then, a function of the *capacities of the organism*, many of which are experienced in consciousness, and the *physical things* the organism selects as objects and therefore controls. These are the ultimate conditions of knowledge. And it must not be forgotten that knowledge has two distinguishable levels: (1) of contents correlated and identified with objects of perception, and so cues for conduct; and (2) propositional contents, developed upon these, yet held to be mental and distinct from the objects of perception and thought which are affirmed, and informative of them. Naive realism tries to carry through the first outlook; critical realism to explain the first and advance to the second.

Because much of objective idealism took its departure

from the Kantian tradition, it tended to think of the categories as conditions of knowledge in the sense that a non-natural mind must contribute forms and relations from itself. We see now that it confused mental capacities as instrumental to perceptual and judgmental content with a contribution of forms from a hidden ego. In contrast, the critical realist asserts a bio-psychological process.

Hegelianism tried to escape that inner dualism which Kant had adopted as a way of escape from Hume. So far, so good. But this immanent deduction of the categories from one another by the dialectical method has never been successfully carried through. The categories are actually discriminations expressive of the situation of the psychophysical organism. They are distinctions to be *discovered* within the individual's experience in an empirical fashion. The whole ideal of *deduction* seems to me fundamentally mistaken. We must add that Hegel, no more than Kant, solved the epistemological problem. His rejection of the thing-in-itself was based upon the meaninglessness of an absolute unknowable and not upon the insight that we can possess knowledge of that which is not an element within experience. The Hegelian has always shown a timidity in facing the problem of perception as a consequence.

In its actual working, objective idealism—whether neo-Kantian or Hegelian—has discovered the categories in the object of thought instead of in the subject. Why? Because that is where they develop. A careful student of idealism writes as follows: "As a matter of fact, objective idealism has deduced the categories from the object and not from the subject. To deduce the categories from the subject, it would have been necessary to define the subject—which the idealist has consistently omitted to do. The subject has been a bystander, whose familiar presence has gradually assumed the appearance of indispensable necessity. . . . The idealist deduces the categories from the subject *in so*

far as conformed to the objective nature of things, and thus, in the last analysis, from the objective nature of things. The actual subject, then, does not impose necessities on nature, but yields to necessities which are dictated to it by something beyond itself.”⁶ In its actual implications, therefore, much of idealism is idealism only in name. It is for this reason that many religiously inclined thinkers speak of objective idealism as closely allied to naturalism. And so it is. It is a naturalism *manqué*. It is this because it never conquered its Kantian beginnings, the idea of constitutive thought, a universal mind, the object of knowledge as given in experience, etc. In short, it was reared on an inadequate epistemology. We shall see that even the pragmatists have not escaped from that magic circle called *experience*.

It is not too much to say that modern philosophy shows an unsettled view of the nature and function of mind. And yet the growth of philosophy in the light of modern biology, psychology, and logic is bringing a remedy to the vague ideas of the past which repeated such terms as relations, synthetic unity, and coherence in a semi-ecstatic way.

Pragmatism and neo-realism have supplemented one another in this advance, pragmatism showing the concrete setting of thought in the position and capacities of the human organism, while neo-realism stressed the actual operations of analysis and synthesis which are performed in consciousness. It is now seen that reflective thought follows “leads” in presented material, that reasoning is a purposive solution of problems by means of ideas and that it involves the noticing of identities and differences. Neo-realism supplements pragmatism by its intellectualism, by its stress upon order, by its anti-romanticism. It adds the iron which pragmatism has at times decidedly needed. Both movements have turned their backs on Kantianism.

⁶ Perry, *Present Philosophical Tendencies*, p. 160.

The actual process of thought is being located. The individual is coming to his own. The natural is seen to include mind. Thought is not a vague creative ferment, but a highly structural process which we can empirically analyze.

But this result confirms the outlook of critical realism. The neo-realist is right in his contention that knowledge must conform to reality, but he wants an identity of idea and thing. He makes thought into a literal presence or a selective apprehension of non-mental entities. He does not see, or will not admit, that thought as a structural process ends in thoughts or ideas which conform to reality as an independent control. He thinks of consciousness as either an act of apprehension or a peculiar inclusion of objects. He would not admit the distinction between the mental content of perception and the physical object of perception. Hence he is compelled to leave the organic basis of knowledge in the capacities of the organism unexplored. Like all naive realists, he is unable to do justice to all the facts of consciousness and is puzzled to account for error and illusion.⁷

Pragmatism, on the other hand, has worked out a more empirical idea of the structure of *thought as a process*. It has removed logic from the rather stiff philosophical setting which it retained even with such a critical thinker as Bosanquet. Whether it has added much logic in the process is a question over which there might well be dispute. But pragmatism never conquered the epistemological problem which it had inherited. Instead, it felt the strength of the drift toward realism and sought more and more to be realistic in a pragmatic sort of way, that is, by ignoring patient analysis and trusting to the right postulates. While valuable as a dissolvent of absolute idealism, it would have accomplished far more, and accomplished it more quickly,

⁷ Neo-realism seems to be working away from its pan-objectivism. This comes out in Spaulding's *The New Rationalism*. But critical realism will be the logical terminus of such a movement.

if it had frankly faced the questions realists propounded. Still, this must be said in its favor, that much of this realism was of the immediatist type and conflicted flatly with the pragmatist's analysis of thought as a process. But in so doing, pragmatism was compelled to develop a doctrine so conflicting with common sense as that of the change of physical things by thought. It has always seemed to me that this implication should have given them pause. But if experience is to be equated with reality without remainder, what can one do? Pragmatism drifted toward realism from its reaction against absolutism; it never conquered the right to realism.

Now critical realism is a mediate realism which seeks to do justice both to reflective thought as a process and to the claims of knowledge. In it—if I may permit myself a prophecy—both pragmatism of a chastened sort and neo-realism of a less doctrinaire type may ultimately find the satisfaction of their insights. The neo-realist must cease to take contents for objects, and the pragmatist must stop juggling with the terms of experience and admit a reference beyond the contents of experience. I am inclined to think that the root-fallacy is the same for both, the inability to distinguish between content and object.

There has been too much eristic in philosophy. For instance, both pragmatist and neo-realist must realize that words are equivocal, that there are several equally valid meanings for terms. There has been too much of a tendency to oversimplify.

It seems to me that a true empiricist can easily note that we use "thought" in four distinct ways. First, thought is a term for a reflective process; second, it is a term for data, the contentual entities which are objects of awareness; third, it is a term for the act of awareness; fourth, it is a term for an idea of an object, for the contentual thought of an object of reference, for a specific knowledge-claim.

It is too bad, perhaps, that there are all these four uses of the one term; and yet a little patience will keep them apart. I have no doubt that the use of the one common term implies the recognition that the individual mind is always involved.

Another example of an equivocal term which has always led to ambiguity is "idea." Eristic has thrived on this word. It has been a case of "either—or." But an idea is a term for an instrument within reflective thought (pragmatism) *and* a term for critically conceived data and ideata as contentual entities (use number two above). The two uses do not conflict. But is there not a third use, the mental *idea of* an affirmed existent? An object of thought may function *in the process of thought* as an instrument in the solution of a problem, and *in the cognitive attitude* as the content of the specific knowledge-claim. It is to this third use that neo-realism has not done justice because of its immediatism. I am inclined to suggest that neo-realism was led to ignore this third possibility as a result of its stress upon subsistents, be these mathematical objects, universals or ideals.

Having gained a better knowledge of the structure of consciousness and a clearer idea of mind as a condition of knowledge, we can now perceive the status of the categories. We can repeat our statement that primary knowledge is a function of the capacities of the organism under stimulation by its environment. These capacities correspond to different levels, and their operation finally results in cognitive ideas directed toward affirmed existents. *The standard elements and distinctions of this knowledge are the categories.* Thus physical things are conceived as in a spatial order and as measurable. What direction they are from one another, what distance lies between them, what their size is—all these are specific bits of knowledge that come under the spatial form as

such. Space as an abstract universal is exemplified by the specific instances. It is the common form or order. Events, or changes in physical things, happen in a peculiar order, the temporal. This order can be abstracted from its instances and studied as a universal. It is the common character of events, and, since physical things change, our knowledge about them contains this order as an internal form. Thus space and time are categories in that they are *characteristic elements* of the content of our knowledge about the physical world. They are not a peculiar logical type of being which somehow underlies the physical world. Once abstracted, however, they can become substantial contents of awareness; they are, then, thoughts, not thoughts of.

Space and time illustrate very well this empirical doctrine of the categories. They are not physical things; they are not even peculiar elements of the physical world. They are characters of our knowledge about things. *It follows that the validity of the categories is bound up with the validity of knowledge.* They are not forms to be deduced from the self in some peculiar fashion; they are features to be discovered in objective knowledge, abstracted, and analyzed. Thus the objective idealist was right in his practical procedure. Unfortunately, the constitutive notion of the self vitiated his final interpretation. It is true, also, that he did not take some of the categories seriously enough. This depreciation is especially true of space and time. He wished to introduce the idea of value into the categories and to speak of higher categories and lower categories, degrees of reality, etc. Besides, the Kantian tradition that space and time are self-contradictory lingered in philosophy long after proper analyses of these categories had been made.

We have made it a fundamental principle that the validity of the categories is bound up with the validity of critical

knowledge about reality. But it would also be true to say that the categories are themselves instances of the most general knowledge about the physical realm. That things are in the spatial order is a knowledge-claim. And knowledge seeks to conform to that about which it is knowledge, to reflect *in its own medium* that which is reproducible about existence. But we have examined knowledge enough already to realize that it plays over existence connecting the past with the present, comparing things which have no very direct continuity, and in general probing nature. Knowledge conforms to reality in an active way much as an investigator conforms to his material. We shall see that the categories follow knowledge in this regard. They give, as it were, the structure of nature as this is projected into consciousness.

The categories appear first in experience as general characters of its pattern. This pattern is a growth which expresses a necessity to which the would-be adaptive organism is exposed. It is not a blind necessity in the mechanical sense; rather is it a necessity which is freely admitted as means to end. The mind of the organism must produce a pattern in consciousness correspondent to physical reality if it is to further the organism's safety. The result is apparent in what I have called the primary categories, viz., space, time, thinghood, and causality.

These primary categories arise at first in an uncritical form. It has taken much reflection on the part of both philosophy and the sciences to separate the objective essentials from the more subjective ingredients and so to achieve categories which are cases of general knowledge about the physical world. The history of causality is, perhaps, the most instructive example of this clarification.

Other categories arise in connection with these primary categories as knowledge is enlarged. Mass and energy as quantities, conservation as a character of these quantities

in nature, and evolution as the genetic side of many empirical substances are examples of later categories which develop and amplify the preliminary categories. These new categories are at once the general features and signs of a fuller knowledge of the world. Their history can be completely investigated since they arose in modern times. Their origin in the data of experience can readily be traced. They are discoveries and not deductions, and yet they are discoveries which require reasoning and precise reflection.

Like all universals, the categories are at once discoveries and standards. Our past experience assumed the temporal and spatial pattern and fell into things causally interacting. Whereupon science marked these features for her domain and formulated her laws in terms of such universal characters. Any thing or any event is expected to obey this framework which has been built up from a wide experience. A thing is assumed to have mass and to be in a definite position or in motion from one position to another; an event is assumed to be a function of antecedent conditions. In this sense, the categories are postulated to apply to all possible experience. They are guides for the mastery of new instances, of complex and tangled fields. Particular laws cannot be deduced beforehand, but it can be maintained that these laws will come under the categories. In this sense, they apply to all possible experience.

The question has at times been raised as to what guaranty there is that nature will recognize the categories. Kant, it will be remembered, tried to meet this difficulty by having the categories make nature. But he could give no guaranty that the ego and its forms would not change. The critical realist meets the difficulty in a different way. The categories are cases of general knowledge about nature resting upon the control by nature of the objective data of consciousness, a control actively furthered by the organism. Hence, nature itself would need to change before

they would become invalid. And while we must admit that we cannot demonstrate that nature may not abruptly change its objective order, this thought is essentially unmotivated and can hardly be entertained seriously by any one who realizes the massiveness of nature and the fact that particular changes are expressions of that which changes. This hypothetical catastrophe assumes an uncaused change and so conflicts with our actual knowledge of nature. It should be noted that any gradual change in nature would be reflected in the categories.

In conclusion, attention must be called to the two general classes of categories, the epistemological and the metaphysical. Space, time, causality, organization, conservation, energy, etc., are metaphysical categories, that is, fundamental concepts characteristic of our knowledge about nature. In the following articles we shall deal chiefly with this class of categories; but, if we are to secure mastery in philosophy, we must also bear in mind those categories which concern knowledge. We must be able to get the correct interpretation for such terms as subject, object, idea, awareness, datum, phenomenon, consciousness, etc. We must be able to appreciate the structure of consciousness, its distinctions, claims, and affirmations. It is this that critical realism claims to do. It is a realism which stresses mental process, which regards the mind as an organ of the psycho-physical individual, which relinquishes the myth of a mysterious act of apprehension overleaping the boundaries of space and time, which realizes that knowledge is resident in consciousness. In this way, the epistemological categories harmonize with the metaphysical categories. Critical realism of this naturalistic type has no room for a disembodied knower.

R. W. SELLARS.

UNIVERSITY OF MICHIGAN.